MOONSTAR4

User's instruction manual

This manual contains important information about the safe installation and use of this product
Please read this instruction manual carefully before installing or operating
Please keep these instructions in a safe place for future reference

Introduction

Thanks for choosing our laser device, believing this brand new product will bring you unlimited marvel and happiness. Before operating this device, please read this manual thoroughly, and retain it for future reference.

CAUTION

Please read this manual fully before installing or operating this product as it contains important safety information relating to its installation and operation.

This Class 3B laser product emits hazardous levels of optical radiation and will cause injury to the eyes if viewed directly.

This product is not suitable for projection directly at audiences or other personnel.

This product must not be used for any form of audience scanning application and is for professional use only.

Important information

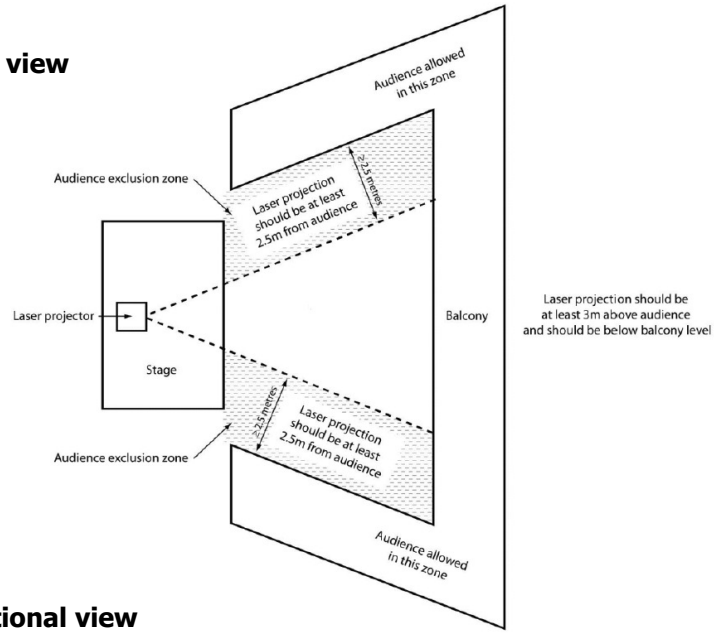
This product is a Class 3B laser and should only be installed and used by personal who are trained in the management of laser radiation and are able to operate in accordance within the guidance given by the Health and Safety Executive (HSE) in HS(G)95: "The Radiation Safety of Lasers used for Display purposes".

This product contains no user-serviceable parts. Under no circumstances should any attempt be made by the user to dismantle or modify it in any way.

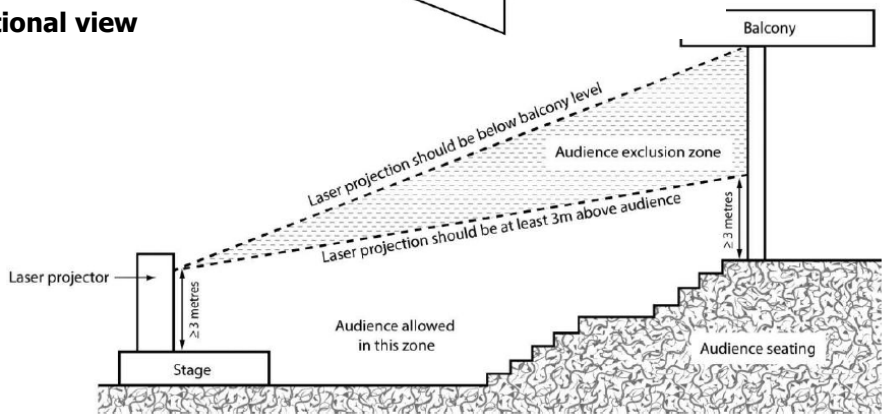
Installation instructions

This product must be securely mounted with adequate fixings to hold the weight. If mounted at height, use a safety wire attached to the eyebolt and a secondary fixing point. Position the aperture so that its emission is always directed away from people and objects that are able to reflect the emission towards people. In this regard the separation distances of 3 metres vertically and 2.5 metres horizontally, cited in HS(G)95 and shown below must be observed.

Vertical bird's eye view


Audience allowed in this zone
Audience exclusion zone
Laser projection should be at least 2.5m from audience
≥2.5 metres
Laser projector
Stage
Balcony
Laser projection should be at least 3m above audience and should be below balcony level
≥2.5 metres
Laser projection should be at least 2.5m from audience
Audience exclusion zone
Audience allowed in this zone

Vertical cross sectional view



Unpacking

Please check the contents to ensure that the product has been received in good condition.

Laser x 1 unit	I.R. remote control x1 pc
IEC Power Lead x 1pc	Safety Keys x2pcs

If you find any accessory is missing or the product has arrived with any problems, please contact your retailer at once.

This product contains no user-serviceable parts so make no attempt to try to fix or modify this item yourself as this will invalidate the warranty. We recommend you keep the original package and proof of purchase for any possible replacement or returned demand.

Setting up

1. Unpack the laser ensuring all packaging and tape is removed.

2. Always test the laser before fixing in a permanent location.

3. Connect the IEC mains plug and switch the rear power switch on.

4. Insert the safety key and turn to a quarter turn clockwise. At this point ensure that no one is exposed to laser radiation.

5. Select which mode you want to operate the laser in.

6. Leave the laser to run for 10 minutes before installing in its location.

Installation

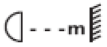
When mounting at height, attach a safety wire to the eyebolt with an independent fixing.
Use the integral mounting bracket with a suitable clamp for stand or truss being fixed to. When mounting directly to ceiling surfaces, be sure to use adequate fixings for the supporting material.

Connecting to mains, earth wire (ground) must be connected.

Use the supplied IEC lead to connect to the main power supply as follows:

Wire	Connection	International symbol
Brown	Live	L
Blue	Neutral	N
Yellow/Cyan	Earth	⏚

For your safety, please kindly pay attention to all of the warnings below:

- Always plug in the power plug last and disconnect from the mains when the device is not in use or before cleaning.
- Do not install and operate the device in rain or extreme heat, moisture or dusty environments.
- This device is for indoor use only and in a dry environment.
- Do not switch on immediately. Wait until the unit reaches room temperature.
- Do not shake the device and avoid brute force when installing or operating.
- Do not use the device during thunderstorms and please disconnect the power.
- Do not use solvents or aggressive detergent to clean the device. Use a soft and clean cloth.
- Do not modify the device or the connected power cord without authorisation.
- Do not stare into the aperture. This product emits hazardous levels of optical radiation and will cause serious injury to the eyes if viewed at close range.
- This product should be securely mounted so that its output emission is always directed away from people and at objects that are able to reflect emission towards people. In this regard, the separation distances cited in HS(G)95 should be observed.
- The symbol  determines the minimum distance from lighted objects. The minimum distance between light-output and the illuminated surface must be more than 0.5m.

Replacing the fuse

First disconnect from the mains power supply then remove the fuse holder above the IEC Socket to reveal the fuse. Replace with the correct fuse rating as stated on the product or in the user manual. Then lock the fuse holder cover back into place.

General maintenance

Be sure to power off the fixture before conducting maintenance.

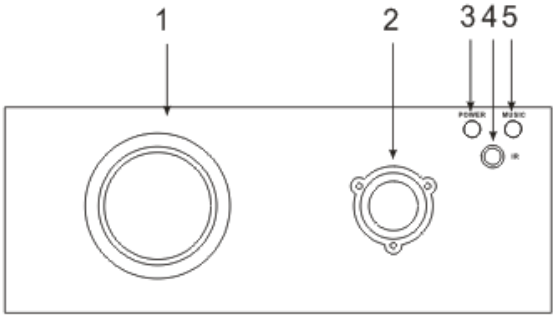
To maintain optimum performance and minimize wear, fixtures should be cleaned frequently.

Usage and environment are contributing factors in determining frequency. As a general rule, fixtures should be cleaned at least twice a month. Dust build-up reduces light output & performance as well as overheating. This can lead to reduced life and increased mechanical wear.

Unplug fixture from power. Use a vacuum or air compressor and a soft brush to remove dust collected on external vents and internal components. Clean all glass when fixture is cold with a mild solution to the cloth or tissue, and drag dirt and grime to the outside of the lens. Gently polish optical surfaces until they are free of haze and lint.

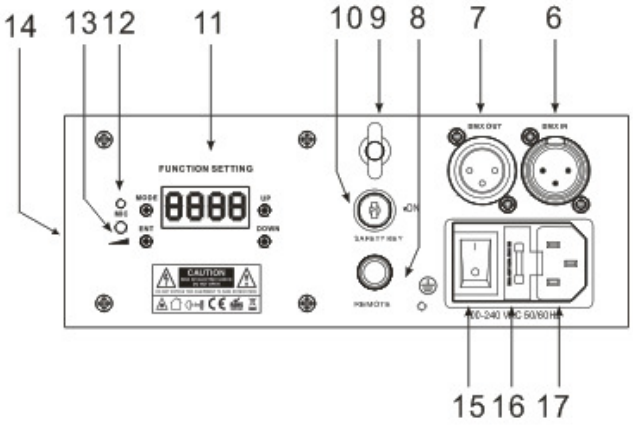
The cleaning of internal and external optical lenses and/or mirrors must be carried out periodically to optimize light output. Cleaning frequently depends on the environment in which the fixture operates: damp, smoky or particularly dirty surroundings can require cleaning fluid. Always dry the parts carefully. Clean the external optics at least every 20 days.

Front panel



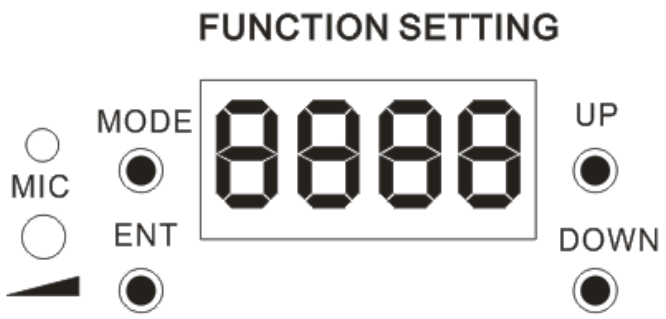
1. Laser aperture
2. LED aperture
3. Power LED
4. I.R. remote receiver
5. Music LED

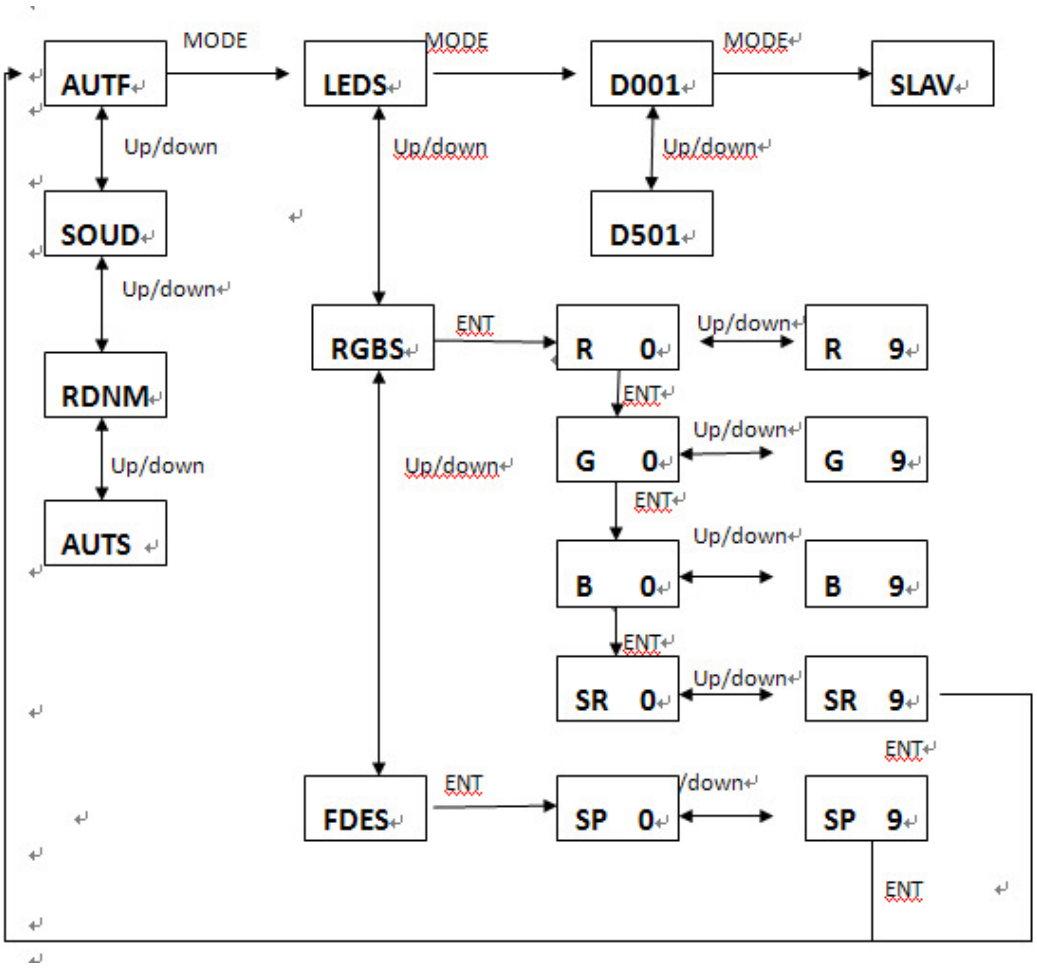
Rear Panel



6. DMX input
7. DMX output
8. Remote power connector
9. Safety eyebolt
10. Safety lock
11.Contorl panel
12.Internal microphone
13.Sensitivity
14.Cool fan
15.IEC mains inlet
16.Mains fuse holder
17.Power switch

Control panel





The control panel and display allow the user to adjust settings as follows…

Press MODE to navigate through the options

Press ENTER to select an option and adjust value using UP and DOWN buttons

Press ENTER again to confirm setting

Control panel options

<table>
<tr><td>Display</td><td colspan="2">Mode</td><td rowspan="5">Press ENT for setting(press MODE to exit)</td></tr>
<tr><td>Aut</td><td colspan="2">Automatic mode</td></tr>
<tr><td>AutS</td><td colspan="2">Automatic slow mode</td></tr>
<tr><td>RDNM</td><td colspan="2">Auto Shuffle play</td></tr>
<tr><td>Soud</td><td colspan="2">Sound activated mode</td></tr>
<tr><td rowspan="5">LED</td><td rowspan="4">RGBS</td><td>R0——R9</td><td>Red LED:
brightness:weak-strong</td></tr>
<tr><td>G0——G9</td><td>Green LED:
brightness:weak-strong</td></tr>
<tr><td>B0——B9</td><td>Blue LED:
brightness:weak-strong</td></tr>
<tr><td>SR0—SR9</td><td>LED strobe: slow -fast</td></tr>
<tr><td>FDES</td><td>SP0—SP9</td><td>LED gradual change:slow -fast</td></tr>
<tr><td>d001</td><td colspan="2">DMX start address</td><td rowspan="2">Press ENT for setting(press MODE to exit)</td></tr>
<tr><td>SLAU</td><td colspan="2">Slave mode</td></tr>
<tr><td rowspan="3">REMX</td><td colspan="2">REM0</td><td>Automatic mode</td></tr>
<tr><td colspan="2">REM1</td><td>Sound activated mode</td></tr>
<tr><td colspan="2">REM2</td><td>Manual mode</td></tr>
</table>

Stand-alone modes

THE laser can operate in stand-alone mode one of 3 ways: Auto or Sound-activated

Automatic fast Show / / Stand Alone mode (Auto)

1 Press the function button (MODE) to enter Mode options
2 Press the function button until the LED panel shows Auto
3 Press the Enter button to confirm the setting The laser will now be working in Automatic fast / Stand Alone mode

Automatic slow Show / Stand Alone mode (Auto)

1 Press the function button (MODE) to enter Mode options
2 Press the function button until the LED panel shows Auto
3 Press the Enter button to confirm the setting The laser will now be working in Automatic slow / Stand Alone mode

Sound Activated / Sound-to-Light / Stand Alone mode (Sound)

1 Press the function button (MODE) to enter Mode options
2 Press the function button until the LED panel shows Sound
3 Press the Enter button to confirm the setting The laser will now be working in Sound Activated

Color mode / manual setting mode (color)

1 Press the function button (MODE) to enter Mode options
2 Press the function button until the LED panel shows color
3 In color mode press ENT into manual setting submenu, setting parameter manually to set the display effect. Pressing ENT into next setting till all finished then go back to home menu.

DMX mode

1 Press the function button (mode) to enter Mode options
2 Press the function button until the LED panel shows d001
3 Press the Enter button to confirm the setting or change the address using the Up and Down buttons 4 Press the ENT button to confirm the setting The laser will now be working in DMX mod

DMX mode / DMX address setting

1 Ensure the unit is in DMX mode (see above)
2 Press the Up or Down buttons to adjust the DMX address
3 Press the Enter button to confirm the setting

If multiple connected units are to be controlled in exactly the same way, set all units to the same starting address (e.g. 001). If individual control of multiple connected units is required, each unit must have its own starting address. This address must be at least 10 channels apart e.g. set the first unit to 001 and the second unit to 011, the third unit to 021 and so on. The DMX controller will now control all the connected units separately.

Master/Slave mode

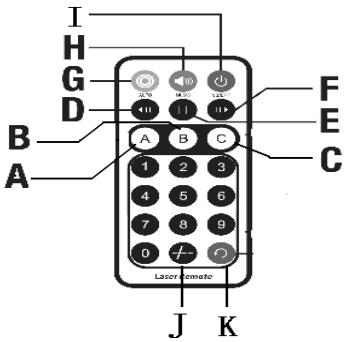
1 Press the function button (MODE) to enter Mode options
2 Press the function button until the LED panel shows SLA
3 Press the Enter button to confirm the setting

The laser will now be working in Slave mode

To create a Master/Slave chain of units, one laser has to be designated as the Master unit whilst the remaining units have to be set as Slave units. To set the Master unit, choose one laser and set it to your desired mode (Auto mode, Sound-to-Light mode, etc). Next connect all other units via DMX cables. To achieve this, join the DMX output of one unit to the next unit's DMX input until all lasers are connected. Set all the Slave units to Slave mode (see above). The Slave lasers will now duplicate the actions of the Master unit.

Microphone sensitivity

In sound-activated mode, the sensitivity of the internal microphone can be adjusted via the control panel. To set the sensitivity level, do the following…



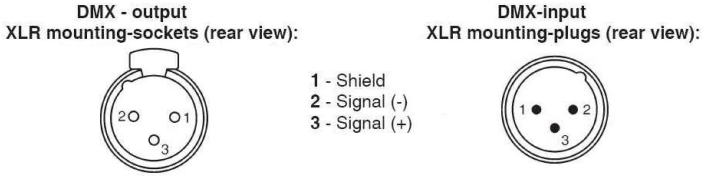
Remote control mode

The laser can be operated using the supplied handheld infra-red remote control.
To use this remote control, firstly, remove the plastic tab at the bottom of the remote to activate the internal battery. If necessary, this can be replaced with a standard CR2025 button cell.

A The A is red laser strobing, use the 0-8 digit buttons to choose strobing speed,0 is close,9 is lighting;
B The B is LED strobing; use the 0-8 digit buttons to choose strobing speed,0 is close;9 is lighting ;
C The C is the speed of the motor; use the 0-9 digit buttons to choose speed,
D/F Color buttons Press buttons to cycle through laser's/LED's available color;
E Pause button Press button to pause the laser effect;
G Auto mode Press button to activate Auto mode, First press is AUTO fast,second press is AUTO slow
H Music mode Press button to activate Sound-to-Light mode
I On/Off button Press button to turn the laser on and off
J/K Fruitless Keys;

DMX MODE

The laser is equipped with 3-pin XLR connectors for DMX input and oThese connectors are wired in parallel. Only use a shielded twisted-pair cable designed for 3-pin XLR-plugs and connectors in order to connect the controller with the fixture or one fixture with another.



Caution: At the last fixture, the DMX-cable has to end with a terminator.

Solder a 120 Ohm resistor between PIN 2 (-) and PIN 3 (+) into a 3-pin XLR-plug and plug it in the DMX-output of the last fixture.

DMX parameters

CHANNEL	DMX	CONTROL
CH 1 CONTROL MODE	000-049	DMX MODE
	050-99	Automatic slow
	100-149	Automatic fast
	150-199	Sound mode
	200-255	Shuffle play
CH2 COLOR SELECTION	000-004	Black out
	005-028	Red on
	029-056	Green on
	057-084	Red on & Green on
	085-112	Green strobing
	113-140	Red strobing
	141-168	Red on & Green strobing
	169-197	Red strobing & Green on
	198-224	Red & Green strobing
	225-255	Red & Green(alternate strobing)
CH3 STROBING	000-004	No function
	005-249	Strobing (show-fast)
	250-255	Strobing to sound
CH4 ROTATION1	000-004	No rotation
	005-127	Clockwise rotation(slow-fast)
	128-133	Stop
	134-255	Counterclockwise rotation (slow-fast)
CH 5 LASER VIBRATE	000-004	No Function
	005-255	Vibrate：slow-fast
CH6 LASER TWINKLING	000-255	Twinkling:slow-fast
CH 7 RED LED	000-127	RED LED lighting
	128-169	LED brightness 0%-100%
	170-209	LED brightness 100%-0%
	210-255	LED brightness 100%-0%-100%
CH 8 GREEN LED	000-127	GREEN LED lighting
	128-169	LED brightness 0%-100%
	170-209	LED brightness 100%-0%
	210-255	LED brightness 100%-0%-100%
CH9 BLUE LED	000-127	BLUE LED lighting
	128-169	LED brightness 0%-100%
	170-209	LED brightness 100%-0%
	210-255	LED brightness 100%-0%-100%
CH10 LED DIM	000-255	LED DIMMER
CH11 LED STROBE	000-004	No strobe
	005-249	Strobe:slow-fast
	250-255	Strobing to sound
CH12 LED ROTATE	000-004	No rotation
	005-127	Clockwise rotation(slow-fast)
	128-133	Stop
	134-255	Counterclockwise rotation (slow-fast)

Specifications

Model	**MOONSTAR4**
Power supply	100-240Vac, 50/60Hz(IEC)
Power consumption	20W
Fuse rating	T1A 250V(20mm glass)
Red laser power	100mw 650nm
Green laser power	50mw 532nm
Laser class	3R
Blue LED power	455nm 3W
Amber LED power	600nm 3W
White led POWER	6500K 3W
Operating temperature range	10-40℃
DMX connection	3-pin XLR
DMX channels	1-10
Remote control battery	CR2025 button cell
Dimensions	225×185×80mm
Net Weight	2 kgs

Important: This product conformed to Laser & LED Safety standard BSEN60825-1 2007 incorporating corrigendum 2008

Disposal: The "Crossed Wheelie Bin" symbol on the product means that the product is classed as Electrical or Electronic equipment and should not be disposed with other household or commercial waste at the end of its useful life.